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MOUNTAIN HAUNTS OF THE COASTAL ALGONQUIAN¹

By MAX SCHRABISCH

IT was in 1899 that the writer began the study of prehistoric rock shelters, that is, natural rock formations anciently resorted to by the Redman because of the protection they afforded from the elements. A thorough and systematic search continued for the past twenty years led to the discovery of no fewer than one hundred and twenty-nine of these interesting sites, scattered over an area of approximately 5,000 square miles. Owing to the Indian's former presence under these rocks each of them yielded remains of his handiwork or other refuse attributable to him, often in great abundance and of such a nature as to throw much light upon his mode of life, while sojourning under their hospitable roof.

Strange to say, all these primitive abiding places had evidently remained undisturbed since the Redman's final departure, excepting a few cases, where some modern junk was found on the surface beneath the sheltering roof, left behind, no doubt, by some modern hunters or timbermen. As a consequence, the culture *débris* accumulated under the rocks was always intact or in its original condition and all the archaeological objects embedded therein were lying in situ, viz., in the very place where he had dropped them.

The fact that this class of sites had wholly escaped the attention of curio hunters who, it would seem, never suspected their true significance, could not but be gratifying to the investigator whose aim is not merely the collecting of relics but rather the gleaning of such information as may be legitimately derived both from the assemblage of artifacts and their relative position in the subsoil. If correctly interpreted, the data thus observed may, indeed, serve to elucidate many a problem involved in the study of the American Indian.

¹ Read by title at the Baltimore meeting of the Anthropological Association, Dec., 1918.

DISTRIBUTION OF SITES

The area explored by the writer comprises most of the territory extending southward from the Catskills in New York state to a line across New Jersey, from Lambertville on Delaware river to Perth Amboy on Raritan bay, and is bounded on the west by the Delaware and on the east by Hudson river, thus including a large portion of southeastern New York and all of northern Jersey.

In the State of New York fifty-one rock stations have so far been noted, namely, ten in Rockland county, twelve in Orange county, and twenty-nine in Ulster county. Discarding modern geographical nomenclature and considering only the physiographic features amid which they occur, their distribution is as follows: Four in the Catskills, twenty-five in the Shawangunk range, and twenty-two in the Ramapo mountains. In other words, all the prehistoric rock sites in New York state known to the writer are situated within the mountains or at their outskirts.

In New Jersey these sites are distributed in a somewhat similar manner for of a total of seventy-eight discovered about two thirds lie in mountainous districts. In point of fact, there is scarcely a range of hills in northern New Jersey but is remarkable for the occurrence within it of one or several aboriginal rock shelters. This is particularly true of the New Jersey highlands and to a lesser degree of the Kittatinnies, the Watchung, the Jenny Jump, and the Musconetcong mountains. However, as already indicated, a considerable number of these stations lie at some distance from the hills, but wherever this is the case the contour of the land or the natural features surrounding them are invariably quite rough, being characterized by ledges and rocky ridges.

If in a river valley, sites of this description were apparently in great demand, and this for obvious reasons. For as they lay along the more important prehistoric routes of travel, which commonly followed the river courses, they could not only be easily approached, but the proximity of a stream well stocked with fish was bound to make them desirable for habitation, since fish was largely depended upon for food, it forming an important part of the Indian's diet.

Nor does it appear that the aborigine was at all fastidious, when about to make use of a covert thus situated, as he would not infrequently avail himself of one that was quite small and otherwise uncomfortable, provided, of course, that he did not have much choice.

It is clear, therefore, that easy access or favorable situation was a factor of some weight with the savage in influencing his selection of a natural shelter, however mean. On the other hand, there is many a rock-house of good configuration that had been spurned seemingly for no other reason than its remoteness from the beaten path or else, perhaps, on account of the propinquity of other shelters that, for some cause or other, were more to his liking, in which case he generally evinced, it seems, a considerable degree of native shrewdness choosing, without doubt, one which was in every sense best suited for his purpose.

A careful survey of the river valleys of northern New Jersey resulted in the identification of some eighteen rock stations, most of them of small dimensions and rather unattractive from a structural viewpoint, their redeeming feature having been favorable position. Only six of these, however, are on or close to the bank of the main stream, the others lying on some tributary at some distance from the former.

On Delaware river four sites were found, the most important of which is at Delaware Water Gap, above Dunnfield creek, at the foot of Blockade mountain. Along Paulinskill valley there are twelve; one is on Pequest river, and another on the bank of the Hudson, at the base of the Palisades about opposite Yonkers.

Classifying all the northern New Jersey rock stations according to counties, Warren county ranks first with twenty-nine; in Sussex county twenty-five were located; in Morris eight; in Passaic eight; in Bergen four; in Essex two and in Hunterdon two. This shows that the majority of these sites are in northwestern New Jersey, where the hills are highest and the topography more rugged than elsewhere in the State.

PRINCIPAL TYPES

As may be readily imagined, rock shelters exhibit an endless variety of structure and this to such an extent that, strictly speaking, each is in a class by itself. They are subjected to the operation of the law of evolution which holds true for the crust of the globe just as it does for the myriad tribes of plants and animals that clothe and people it.

The great geologic forces are incessantly at work shaping and reshaping, tearing down and building up the earth's crust. Nothing, not even the solid framework of the mountains, can forever withstand the assaults and destructive processes of subaërial denudation consisting in the mechanical action of heat and frost, much less the chemical effects of water, holding carbonic acid in solution. Erosive and corrosive agencies are constantly busy disintegrating the face of the earth, wearing down the lofty peaks, nay, reducing, in the course of ages, whole mountain ranges to their very foundation, that is, planing them down to a flat expanse.

Amid this amazing diversity of structure assumed by rock shelters under the operation of epigene or superficial agents of change, *i. e.*, the atmosphere, terrestrial water, and ice, four general types may, nevertheless, be distinguished. Most prevalent is that of the sheltering rock or overhanging ledge, a structure due mostly to the under-cutting of streams, by which process the lower portion of the cliff is gradually worn away, leaving a roof-shaped rock-mass on top. The shelter, thus formed, could be utilized as a place of abode as it yielded more or less protection from wind and rain. A close study of the area under review has demonstrated that most of the prehistoric rock stations located therein are of this kind.

Nor was it only on this continent that coverts like this, furnished by nature and other types presently to be dealt with, were used. In all parts of the world, but notably in central Europe, late researches have made it clear that our ancestors, the men of the Old Stone age, were markedly troglodytic in their habits, inasmuch as they were wont to avail themselves of natural shelters, wherever found. Among famous European rock shelters, probably dating back to the Third Interglacial period about 100,000 years ago, we may mention

those of the Kesslerloch and Schweitzersbild in south Germany and Switzerland, respectively, the excavation of which within recent years has yielded a profusion of articles of human manufacture, partly belonging to the Moustérien stage of culture.

Cavities serviceable for habitation have been found at the base of or under huge erratics, particularly when they happened to be top-heavy. Such hollows, if of ample size, often contain remains of the Redman's industry bespeaking his quondam presence thereabouts. Conspicuous among this class of rock-stations are the sites of Bear Rock, Morris county, N. J., and of Stony Point, Rockland county, N. Y.

Shelters of archaeological moment occur sporadically at the foot of rock masses that become detached from a parent cliff near by. An example of this type is furnished by a station, about a mile northwest of Lake Minnewaska, on Shawangunk mountain, Ulster county, N. Y.

Another type of natural covert, not infrequently met with, partakes somewhat of the nature of a cave. It owes its origin to detritus or an accumulation of rocks piled up one above another in such a manner as to form a cavity underneath. It is usually found near the base of a high crag or escarpment, from which the detritus was derived by the breaking up of the latter under the influence of atmospheric agencies, that are ceaselessly at work disrupting and disintegrating the faces of cliffs and exposed rock masses. Most commonly, rocks are split by water freezing in the interstitial pores and forcing the grains and particles asunder. In consequence, rock-falls occur from the face of the cliffs which pile up along their base and which may, if the detached slices are large, eventually give rise to a cavern. This class of shelters is typically represented by the stations of Federal Hill, near Pompton junction, Passaic county, N. J.; Mount Buchanan, near Lake Mombasha, Orange county, N. Y.; Fox Hollow and Little Pond, on Shawangunk mountain, near Saint Josen, Ulster county, N. Y.

One more type, *viz.*, that of the cave proper, remains yet to be considered. Although a few caves were located in southeastern New York, their exploration was usually attended with negative

results, but one of these testifying to ancient Indian occupation, viz., Murderer's cave, near Johnsonburg, Rockland county. In the limestone region of Sussex and Warren counties, N. J., however, no fewer than four of these interesting sites came to the notice of the investigator, each of them of prehistoric significance.

It is well known that in lands composed chiefly of limestone, corrosion proceeds more rapidly than in rocks of other kinds. This is due to the chemical action of water. Being charged with carbonic acid derived from the atmosphere and decaying vegetable and animal matter, with which soil is more or less impregnated, it works through interstitial fissures and pores, dissolves the limestone and removes it as carbonate of lime, thus giving rise to underground channels and caverns.

Paramount in point of remains among the four limestone stations was Owen's cave, on Wallkill river, Sussex county; the others were Berry's Cove cave, south of Sussex, Sussex county; the Devil's Kitchen, near Blairstown, and the Wolf's den, near Southtown, the latter two in Warren county. A fifth one was discovered at the foot of Garret mountain, underneath a basaltic block of colossal size, within the city limits of Paterson, N. J.

While all these are small, the writer was told of at least one limestone cavern of large dimensions, namely, Hartmann's cave, some six miles west of Delaware river, near Stroudsburg, Pa. Visiting it a few years since, he learned that it had been excavated with most gratifying results some thirty years ago by Professor Holmes, of Washington, D. C., who secured more than a thousand specimens of primitive workmanship and of many different types. Hence there can be no doubt that this station was one of the headquarters of the Lenape, once ranging over all this territory.

INFLUENCE OF LITHOLOGICAL FEATURES IN DETERMINING ROCK-FORMATIONS

The rock sites of the region in question are composed of many different minerals, and it does not require much observation to be impressed with the conviction that there exists a correlation between the relative frequency of these sites and the materials enter-

ing into their composition. In short, the occurrence of this peculiar formation is largely dependent upon the character and mineral structure of rocks.

Enough has already been said to make us presume that limestone would be the rock most favorable to the formation of every kind of natural covert, suitable for habitation. And so it is. Nowhere in all this broad extent of country were rock shelters more plentiful than among the derivative limestones of Sussex and Warren counties of northwestern New Jersey. Here, more than one hundred such structures were noted, fifty-four of which bore evidence of aboriginal occupation.

In the second place come the metamorphic rocks, *i. e.*, the gneisses and granites of the Ramapo range and adjoining hills. Among fifty-odd shelters observed there, no fewer than thirty-two were found to have been occupied.

As regards the upper Silurian limestones (Shawangunk grit) of Shawangunk mountain, eligible sites were met with on almost every square mile of land investigated. In some of the gorges trenching this range they occurred in rows along the base of the precipices and cliffs that overlook the streams tributary to Rondout creek. Within a tract, forty square miles in extent or thereabouts, stretching west of Lakes Mohonk and Minnewaska towards Rondout creek, some fifty good rock shelters were located, twenty-five of which gave evidence of ancient occupancy.

Considering that less than one quarter of the territory of this range has been surveyed and assuming the ratio of twenty-five rock abodes to each forty square miles to prevail throughout its remaining sections, we may estimate their total number within this district, other things being equal, at not less than one hundred, a number which would greatly exceed the proportion per square mile observed in northern New Jersey.

Among the basaltic traps and other rocks of volcanic origin within the county of Passaic and adjacent districts there were about a dozen sites, nine of which are of archaeological significance.

Four rock stations were noted in the Devonian conglomerates or old red sandstones of the Catskill mountains within an area of

some fifteen square miles, near Woodstock, Ulster county, N. Y. There can be little doubt that additional sites dot all parts of this range.

A thorough search along the ravines and outcrops of sandstone of northern New Jersey and Rockland county, N. Y., revealed the existence of but three stations containing the telltale marks of Indian activities. Two of these are in Medina sandstone, north of Dunnfield, at the Delaware Water gap, the other is in a gully, near Tallmans, Rockland county, N. Y.

Lastly, there were two sites in slate ridges in Warren county, N. J. Shelters consisting of shale or argillaceous rocks were invariably devoid of traces of a prehistoric character.

CONDITIONS GOVERNING ROCK STATIONS

The number of Indians once roaming over this region appears to have been egregiously small when contrasted with that of the whites now inhabiting it. Each of their subtribes or divisions had their well-defined precincts jealously guarded against the encroachments of neighbors, within the confines of which they had to eke out a precarious existence mostly by hunting and fishing. It may readily be assumed, therefore, that each individual Indian possessed a most intimate knowledge of his particular section, of its hills and dales, its streams and lakes, and all the prominent features of the landscape.

Their main settlements were in the river valleys or in the more open country, where they could plant maize, beans and a few other vegetables to supplement their meat diet. At certain seasons, but most generally in autumn, neighboring tribes would join in hunting trips to the mountains, which were a kind of game preserve, held in common by a group of tribes, and where they would stalk the deer and secure other quarry, valued for food and peltry. With nothing escaping their keen senses, they could not fail to acquire, moreover, a thorough familiarity with those rugged regions that at their time, were all but impenetrable, a pathless wilderness, the home of panther and bear. Thus, they came to know the runways of deer, the haunts of wild beasts, also where to find water and where to camp after the chase.

In such solitudes, far away from their villages in the valleys, it was but natural that they should avail themselves of some of the sheltering arches of rock that are of such common occurrence in many of our mountain chains. Thus it was that they would resort to rock shelters, the whereabouts of which they well knew. In making their choice, they did not proceed indiscriminately, however, but selected those that complied best with their requirements.

In the first place, a water supply had to be in the immediate vicinity. Water appears, in truth, to have been a factor of prime importance in the choice of a rock abode, but it did evidently not matter much whether such supply was furnished by a spring, a brook, a lake, or even a swamp. This failing, the best shelter would be passed by as unfit for occupation, save, perhaps, some roving Indian who might squat down in it to rest an hour or two. The observation just made has been verified in every instance, for wherever good shelters were noticed, which subsequent examination proved to be destitute of any and all traces of ancient occupation, the main reason for such avoidance was always, it seems, the absence of water.

From the evidence extant we may further infer that, apart from water, roof and floor were the only other factors determining the desirability of a site. If the former did not jut out far enough, say, less than four feet, or if it was so low as to compel crouching, the shelter was likely to be avoided. As a rule, the most favored sites were those having the most extensive roof projection. In some cases this amounted to as much as twenty-five feet, while in archaeologically inferior shelters it dwindled down to about four feet, as stated above.

Again, those sites were given preference that had a dirt floor, quite level and not mixed with too many stones. A plain rock floor or one obstructed by protuberant boulders, buried deeply in the subsoil would, it appears, constitute a serious drawback to prospective occupation. Although the remarks just made have reference to overhanging rocks or rock shelters proper, they apply equally to the other types of coverts previously described.

A factor of minor importance was the exposure or situation of

the site in regard to the points of the compass. On the whole predilection was shown for those shelters which had a more or less southerly exposure and which, therefore, received a more generous amount of sunlight and warmth. Occasionally, however, this rule was found departed from, doubtless, on account of certain other features compensating for this disadvantage.

If we try to picture to ourselves the condition of this region at the time "when wild through woods the noble savage ran," a region covered with jungles or primeval forests, choked with windfalls and an all but impenetrable growth of luxuriant underbrush, reaching in one vast expanse from the Atlantic to the great plains, with mountain fastnesses, trackless and impassable, save for a few narrow trails used by man and beast alike, we may well wonder how the Redskin could move about as freely as he did, how he managed to penetrate to certain sections that, even now, are well nigh inaccessible. Yet to him nothing was inaccessible; he visited every point, knew every landmark, every rock and left his mark wheresoever he went. Consequently, his traces are dug up under rock shelters that are even at the present time quite difficult of approach, situated, as they are, in the heart of the mountains, many miles from the river valleys and the nearest human habitations, both his own, that are no more, and those of the Whites. As mere remoteness did not detract from any site, if otherwise suitable, we need not wonder that rockhouses of the first magnitude with respect to remains have been found in out-of-the-way places.

THE MOST IMPORTANT ROCK STATIONS

The bulk of the one hundred and twenty-nine sites noted lie in the mountains, the others among the foothills or in the river valleys. No less than fourteen of these stations were of considerable archaeological significance by reason of the multiplicity and variety of the remains left behind.

The New York sites were scattered over three mountain ranges. In the Catskills, one at the southern slope of Overlook mountain, north of Woodstock; in the Shawangunk mountains, one upon the banks of Peters kill, near Saint Josen, and in the Ramapo range, the

Golf Hill station, three miles north of Southfields; Man of War rock, at Tuxedo; Horsetable rock, two miles east of Tuxedo, and the Stony Point rockhouse, four miles west of the Hudson river.

In the limestone district of Sussex county, northwestern New Jersey, there occurred four sites, *viz.*, Bevans rockhouse, a mile east of Delaware river; Owen's cave, on Wallkill river; the Gum Hollow shelter, southeast of Swartswood lake, and Moody's rock, on the Muckshaw swamp, two miles south of Newton.

Then there is a site at Delaware Water Gap; another one at Bear rock, four miles north of Boonton; one a mile west of Pompton Plains, the last two in Morris county, and one at Upper Preakness, a mile south of Franklin lake, Passaic county.

CULTURE REMAINS UNDER ROCKS

In no case, as stated elsewhere, had the original conditions been tampered with. The superficial débris, that had accumulated within the shelters since Indian times, consisted chiefly of dead leaves and rock rubble, associated occasionally with some modern waste, such as pieces of rusty iron, glass and broken earthenware. Beneath it, that is, on the original surface, there often lay chips of flint and of other material, bones, potsherds, and even arrowpoints. The culture deposits enclosing the bulk of the remains at varying depths below the surface, were frequently of blackish soil due to an admixture of charcoal and ashes. The latter were suggestive of ancient fireplaces, traces of which could often be discerned in the shape of squares, rudely built of rocks, commonly along the inner wall of the shelter, which then exhibited smoke stains and the effects of the action of fire. The hearths were sometimes filled with charred bones, fire-cracked pebbles, and other refuse.

Some of the stations were remarkable for the immense quantity of bones embedded both in the subsoil under the rock and in special pits near its center or sides, where they formed veritable ossuaries. Although most of the bones were cervine, *i. e.*, belonging to deer, those of rabbit, skunk, opossum, muskrat, raccoon, bear, wild turkey, and other animals were not lacking. Doubtless, such places were the scene of much feasting indulged in after the chase.

The stations of Overlook mountain, Golf hill, Horsetable rock, and Stony Point may be adduced as typical of this class.

In shelters lying near lakes and streams large quantities of fresh water mussels called *Unio fluviatilis* have been encountered, a fact showing that the aborigine was quite fond of this fare. At the Stony Point site these were found associated with numerous oyster shells, a bivalve which could be obtained at places not many miles off. As a curiosity we may mention that a solitary oyster shell was dug up in the Indian deposit two feet below the surface at Owen's cave, fully seventy miles away from the nearest supply.

The types of implements most frequently met with in the débris are arrowpoints, scrapers or fleshers, pitted stone hammers, spearheads, and fragments of pottery. In one of the Towaco shelters, Essex county, N. J., the writer secured a gorget or pendant of slaty material, which was perforated at both ends. Singularly enough, the rarer types of artifacts, such as tomahawks, stone hatchets, celts, and pipes, were absent at all the sites under discussion, excepting the Overlook mountain station which yielded a broken celt and a fragmentary pipe made of steatite.

Potsherds, *viz.*, pieces of pottery, plain or decorated and invariably of Algonquian origin and design, occurred mostly in the upper strata of the accumulated culture deposits. The fact that the lower layers were usually devoid of ceramic ware would seem to indicate a stage of culture when the art of pottery making was yet unknown in these parts. There is, indeed, good ground for assuming that this art was of comparatively late introduction among the tribes of the Atlantic seaboard. But whether the conditions thus observed hint at several horizons of culture must at the present state of our knowledge be considered an open question.

Not a few sites contained no pottery whatever, among them the great station of Horsetable rock. This may be interpreted as meaning that they were never visited by females, for according to Indian ethics it was their duty to carry pots and other household utensils, it being considered beneath the dignity of a warrior to encumber himself with such articles. As conversely some shelters yielded nothing but pottery, we may be justified in assuming that

they were resorted to by women only, and that at certain periods in common with the usages observed by primitive peoples the world over. Sites of this class have been designated as squaw shelters.

Some stations appear to have been used as workshops, if we are to judge from the profusion of flakes, chips and unfinished specimens left behind. Examples of this kind are furnished by most all the important sites as well as by a few smaller ones, notably the station at Huckleberry swamp, on Shawangunk mountain, near Saint Josen, N. Y. Others, again, were little chipping sites to which the red huntsman would repair to fashion a point or two. On Shawangunk mountain, in particular, many such places have been noted.

There are several shelters that bear witness to prolonged occupation, while others seem to have been visited periodically or temporarily, but that for many centuries, either by hunters alone or by whole families, compelled by the exigencies of their existence to shift their quarters.

THE ANCIENT OCCUPANTS

It is certain that the occupants of the rock stations occurring in this wide tract of country were of Algonquian stock, and it is equally certain that they were Lenape, for according to Heckewelder, our foremost authority, the settlements of the Lenape extended from the Mohicannituck (Hudson river) to beyond the Potomac; and from the headwaters of the great rivers Susquehanna and Delaware to the Atlantic ocean.

On the other hand, it is questionable whether all the sites within this region had been tenanted by the Munsee alone, *i.e.*, the northernmost of the three divisions of the Lenape, or whether the Unami, adjoining them southward, frequented some of them, that is, those which lie in New Jersey, south of the Ramapo mountains.

If we follow Heckewelder's lead, all the sites here treated of were anciently resorted to by the Munsee only, for he says that they extended their settlements from the Minnesink, a place named after them, where they had their council seat and fire, quite up to the Hudson on the east, and to the west or southwest far beyond

the Susquehanna; and that their northern boundaries were supposed originally to be the Hudson and the great rivers Susquehanna and Delaware, and their southern boundaries that ridge of hills known in New Jersey by the name of Musconecun, and in Pennsylvania by those of Lehigh and Cohmewag.

According to Ruttenber, however, the Munsee territory extended from the Catskill mountains to the headwaters of the Delaware and Susquehanna, and was bounded on the east by the Hudson; their council fire was lighted at Minnisink, about ten miles south of Maghackemek, N. Y.; and the Unami joined the Munsee on the south, somewhere about Stony Point.

Ruttenber gives the various subdivisions of the Munsee along the Hudson and their location: the Waoroneck about Dans-kammer; the Warranawonkong from Dans-kammer to Saugerties; the Mamekoting west of Shawangunk mountain; the Wawarsink in the district which still bears their name; the Katskills north of Saugerties.

These then were, it would seem, the names of the tribes that once made use of the rock haunts occurring in the Catskill and Shawangunk mountains.

PATERSON,

NEW JERSEY.